REMARKS

Claims 1-3 and 5-22 are currently pending. Of these, Claims 1-3, 5-8, 10-14 and 19-20 are withdrawn. Support for new Claims 21 and 22 is found in the Specification as filed, for example in original Claim 9 and at page 15, lines 13-21 of the Specification as filed. No new matter has been added herewith. The following addresses the substance of the Office Action.

Election/Restrictions

Applicants previously traversed the Restriction Requirement on the basis that the publication of Risco Gastillo is after the priority date of Spanish Patent Application No. P200302869, filed December 4, 2003. Thus, the Gastillo references can not be used in a finding of lack of unity. The Examiner rejected this argument, stating that the filing date of the priority document was not perfected because a certified copy of the priority document along with an English translation had not been submitted. A copy of the Foreign Priority Application was received by the USPTO on June 2, 2006 and an English translation is submitted herewith. Thus, the Gastillo references can not be used in a finding of lack of unity.

The Examiner noted that an additional rejection under 35 U.S.C. § 102(b) also defeats unity of invention. In particular, the Examiner rejected Claims 9 and 15-18 as being anticipated by Krishnan et al. (U.S. Patent No. 6,436,410). However, as discussed below, Krishnan et al. does not anticipate the presently claimed invention. Thus, the Applicants respectfully request that the Examiner reconsider the unity of invention objection and examine the whole set of claims (i.e., claims 1-3 and 5-20).

Objection

Claims 15-18 were objected to under 37 C.F.R. § 1.75(c) as being in improper form because a multiple dependent claim can not depend on a multiple claims for different limitations. Applicants have amended Claims 15 and 17 so that aspects not related to polypeptide are removed from the claims. Accordingly, the claims are in compliance with 37 C.F.R. § 1.75(c).

Non-Statutory Subject Matter

Claims 9 and 15-16 were rejected under 35 U.S.C. § 101 because the claimed invention was directed to non-statutory subject matter. In particular, the Examiners rejected the claims since they related to naturally occurring protein having the same characteristics and utility as in

the nature. In order to overcome this objection and to make clear that the hand of man is present in the invention, Applicants have included the term "isolated" to define the polypeptide of Claims 9, 15 and 17, as recommended by the Examiner. Hence, the Applicants respectfully request removal of the rejection.

Written Description

Claims 9 and 15-18 were rejected under 35 U.S.C. § 112, first paragraph as failing to meet the written description requirement. The examiner objected to the expression "chemically or enzymatically modified sequences derived from sequences homologous to SEQ ID NO 10 conserving their antigenic characteristics" because the genus is highly variant. He stated that one skilled in the art would reasonably conclude that the disclosure fails to provide a representative number of species. He further noted that there is no teaching regarding what amino acids can vary and still conserve the antigenicity.

In order to overcome this objection, Applicants have omitted reference to sequences homologous to SEQ ID NO: 10. Thus, the members of the genus are described by the common attributes of comprising a) SEQ ID NO: 10; b) chemically or enzymatically modified sequences derived from SEQ ID NO: 10 conserving their antigenic characteristics; and/or (c) NcSAG4 polypeptides derived from SEQ ID NO: 10, conserving their antigenic characteristics.

A species within the claimed genus is disclosed in the Specification in Example 2, wherein a recombinant protein (pRNcSAG4) was derived from SEQ ID NO: 10 to obtain a denatured polypeptide bound to a poly-histidine tag (see page 15, lines 13-21 of the Specification as filed). A person skilled in the art would be familiar with procedures such as chemical and/or enzymatic treatment of polypeptide sequences that would give rise to additional species within the claimed genus. For example, proteins may undergo several post-translational enzymatic modifications in the cells. For example, in *T. gondii* (an organism closely related to *N. caninum*), it has been observed that several genes undergo post-translational modification to facilitate transportation inside the cytoplasm of the organism or their anchorage on the cytoplasmic membrane (Burg et al. 1988 *J Immunol* **141**:3584-3591; Cerede et al. 2001 *Ann Pharm Fr* **59**:293-296). Some of these modifications can be lost during the production and purification of the whole or truncated recombinant form of the protein. However, these preparations maintain the same antigenicity as the corresponding native protein, demonstrating that immunogenicity of

an antigen is preserved even when its tertiary structure has been altered (Holec et al. 2008 *Exp Parasitol* **119**:1-6; Yano et al. 1997 *Biochem Biophys Res Commun* **236**:257-261).

Additionally, Applicants hereby provide a Rule 132 declaration by Luis Miguel Ortega Mora, wherein the conservation of antigenic and immunogenic characteristics in modified polypeptide derived from SEQ ID NO 10 is further demonstrated. In particular, the presence of absence of a GPI anchor does not affect the antigenic and immunogenic characteristics of the NcSAG4 protein. A study of immune response and protection against neosporosis by recombinant NcSAG4 in mice and their progeny is also provided, which shows a statistically significant delay in mortality compared to non-immunized animals.

In view of the amendments to the claims and the preceding remarks, the claims are in compliance with the written description requirement. Accordingly, Applicants respectfully request removal of the rejection based on written description.

Enablement

Claims 15-18 were rejected under 35 U.S.C. § 112, first paragraph because, while being enabling for immunogenic compositions, the Specification allegedly does not provide enablement for vaccine compositions.

To overcome this objection, Applicants have deleted recitation of "formulated as a vaccine" from Claim 15. In addition, Claim 18 is amended to replace "A vaccination kit" with -- A kit for eliciting an immune response--. Thus, the claims relate to immunogenic compositions, for which the Examiner acknowledges are enabled by the Specification. Accordingly, Applicants respectfully request removal of the rejection.

Indefiniteness

Claims 9 and 15-18 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In particular, the Examiner rejected the claims for being vague and indefinite in the recitation "chemically or enzymatically modified sequences derived from sequences homologous to SEQ ID NO 10". For example the Examiner stated that one of skill in the art would be unable to determine what amount of homology to SEQ ID NO 10 is required to be considered homologous (90% identity, 70%, 40%, etc). Further he questioned at what point the homology is sufficiently divergent to no longer be considered a modified sequence derived from SEQ ID NO

10. As discussed above, Applicants have omitted reference to sequences homologous to SEQ ID NO: 10 from the claims. Thus, the rejection under 35 U.S.C. § 112, second paragraph with respect to indefiniteness is moot.

Claims 9 and 15-18 were also rejected under 35 U.S.C. § 112, second paragraph as being vague and indefinite in the recitation of "derived from SEQ ID NO: 10", since it is unclear what amount of chemical modification is permitted as implied by the recitation of "derived." Applicants have amended Claim 9 to eliminate the term "derived" so that the Claim now recites that the claimed polypeptides are from or correspond to SEQ ID NO: 10.

Anticipation

Claims 9 and 15-18 were rejected under 35 U.S.C. § 102(b) as being anticipated by Krishnan et al. (U.S. Patent No. 6,436,410) The reference discloses immunogenic compositions comprising *N.caninum* dihydrofolate reductase-thymidylate synthase in combination with a cytokine for eliciting and immune response. The Examiner asserts that since the protein disclosed shares a degree of homology or can be derived from SEQ ID NO 10 via a certain amount of amino acid insertions, substitutions and/or deletions, the protein disclosed by Krishnan et al is deemed to anticipate the instantly filed claims.

As discussed above, Applicants have deleted reference to sequences homologous to SEQ ID NO: 10 from the claims. Thus, the subject matter of the present claims is patentably distinct from Krishnan et al. US 6436410, which discloses the *N. caninum* dihydrofolate reductase-thymidylate synthase, an enzyme identified in tachyzoites. In contrast, the polypeptide described in the present application is based on the NcSAG4 protein, a surface antigen of *N. caninum* expressed during the bradyzoite stage only (Fernández-García et al. 2006 *Mol Biochem Parasitol* **146**:89-97). Accordingly, the claims are not anticipated by the cited reference.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicant reserves the right to pursue at a later date any previously pending or other

broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

CONCLUSION

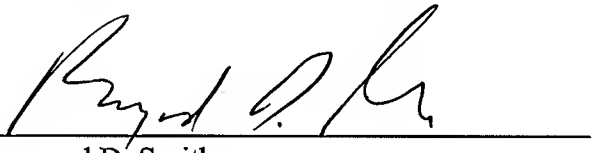
In view of Applicants' amendments to the Claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: December 5, 2008

By: 

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